Design and Synthesis of 4-*O*-Podophyllotoxin Sulfamate Derivatives as Potential Cytotoxic Agents.

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Supplementary section

Page 2: ^{1}H-NMR of compound 1: Podophyllotoxin.
Page 3: ^{1}H-NMR of compound 2: 4-*O*-Podophyllotoxin sulfamate.
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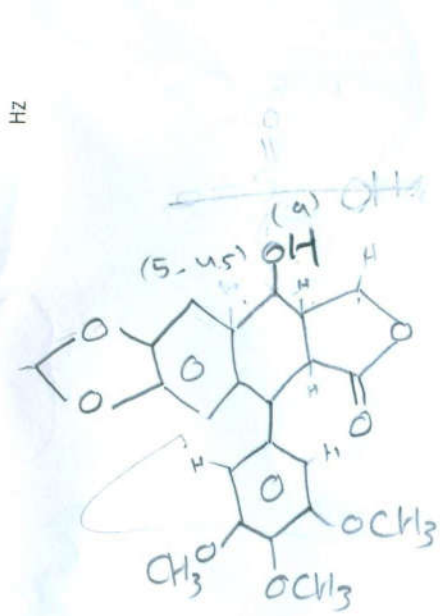
Page 5: ^{1}H-NMR of compound 4: 4-*N*-(2-Pyridinylethyl)-podophyllotoxin sulfamate.
Page 6: ^{1}H-NMR of compound 5: 4-*N*-(2-Pyridinyl)-podophyllotoxin sulfamate.
Page 7: ^{1}H-NMR of compound 6: 4-*N*-(4-Flourophenyl)-podophyllotoxin sulfamate.
Page 8: ^{1}H-NMR of compound 7: 4-*N*-(2-Anthracenyl)-podophyllotoxin sulfamate.

PROTON NMR

compound 1 (podophyllotoxin)

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PROCNO                       1

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NS                           1
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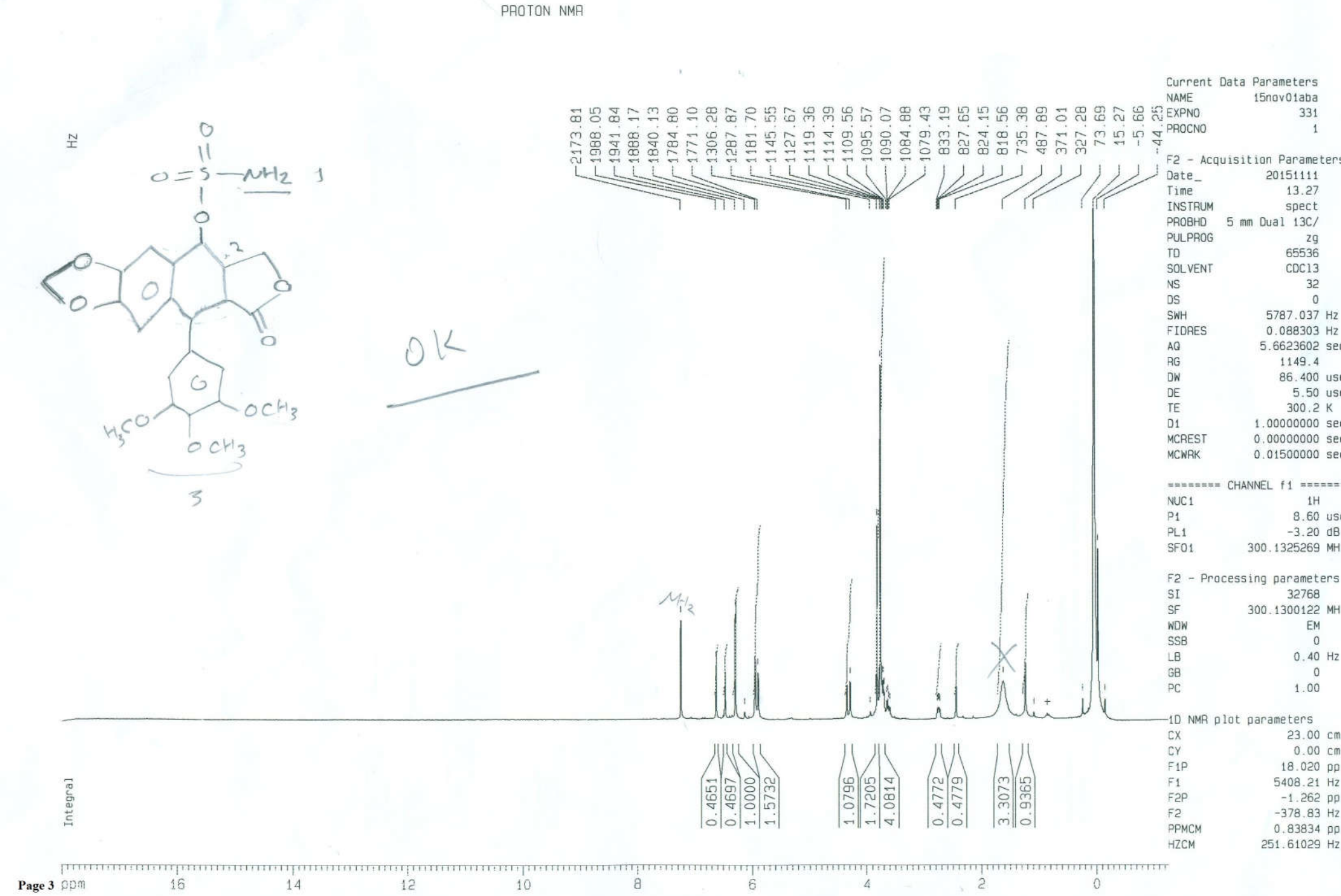
SWH                5787.037 Hz
FIDRES             0.088303 Hz
AQ                 5.6623602 se
RG                      1290.2
DW                     86.400 us
DE                      5.50 us
TE                     298.2 K
D1                 1.00000000 se
MCREST             0.00000000 se
MCWRK              0.01500000 se

======== CHANNEL f1 ======
NUC1                        1H
P1                       8.60 us
PL1                     -3.20 dB
SFO1               300.1325269 MH

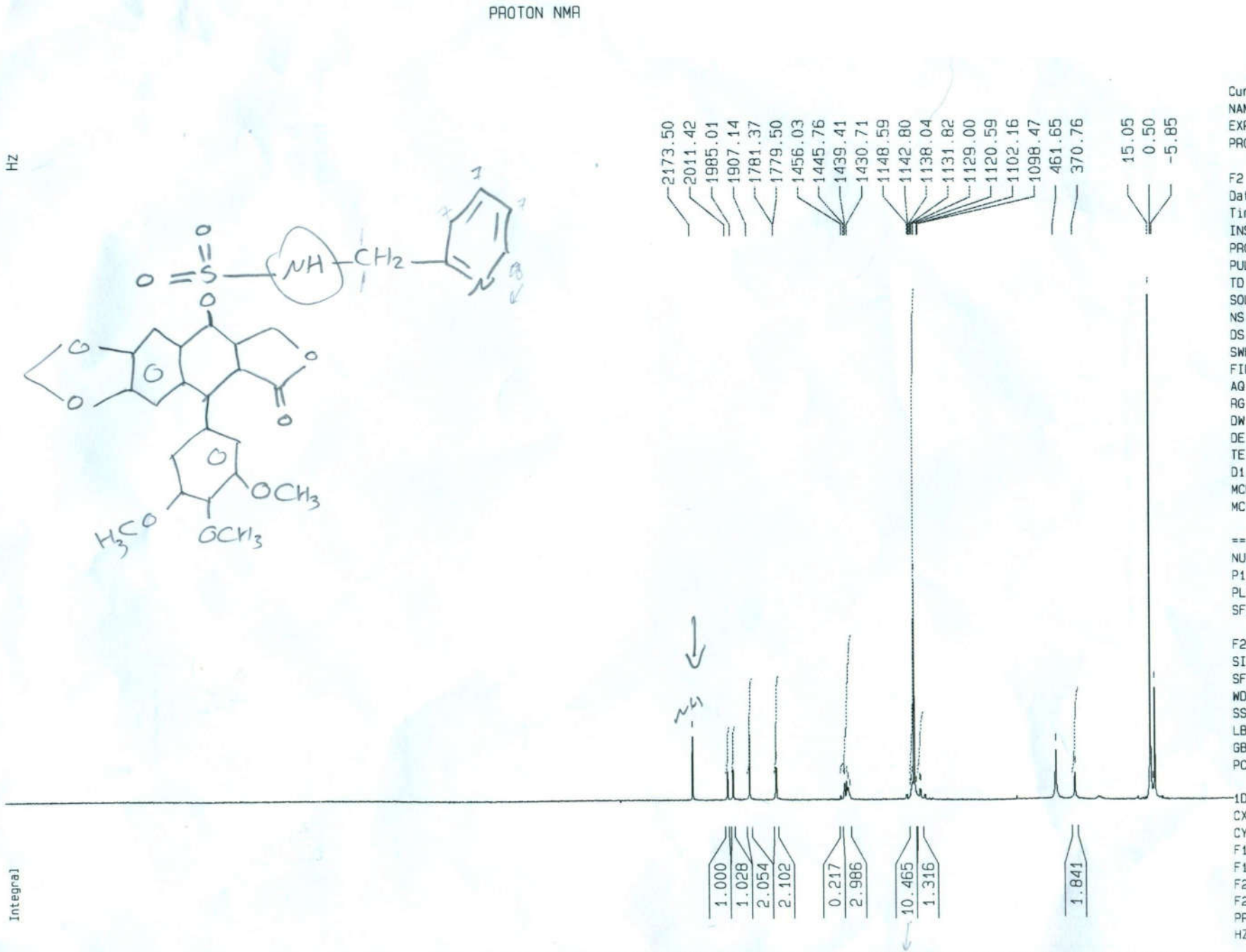
F2 - Processing parameters
SI                       32768
SF                 300.1300122 MH
WDW                         EM
SSB                          0
LB                       0.40 Hz
GB                           0
PC                        1.00

1D NMR plot parameters
CX                      23.00 cm
CY                       0.00 cm
F1P                     18.020 pp
F1                   5408.21 Hz
F2P                     -1.262 pp
F2                   -378.83 Hz
PPMCM                 0.83834 pp
HZCM                251.61029 Hz
```

Compound 2; (4-*O*-Podophyllotoxin sulfamate)



Compound 3: (4-*N*-(2-Pyridinylmethyl)-podophyllotoxin sulfamate)



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PROCNO 1

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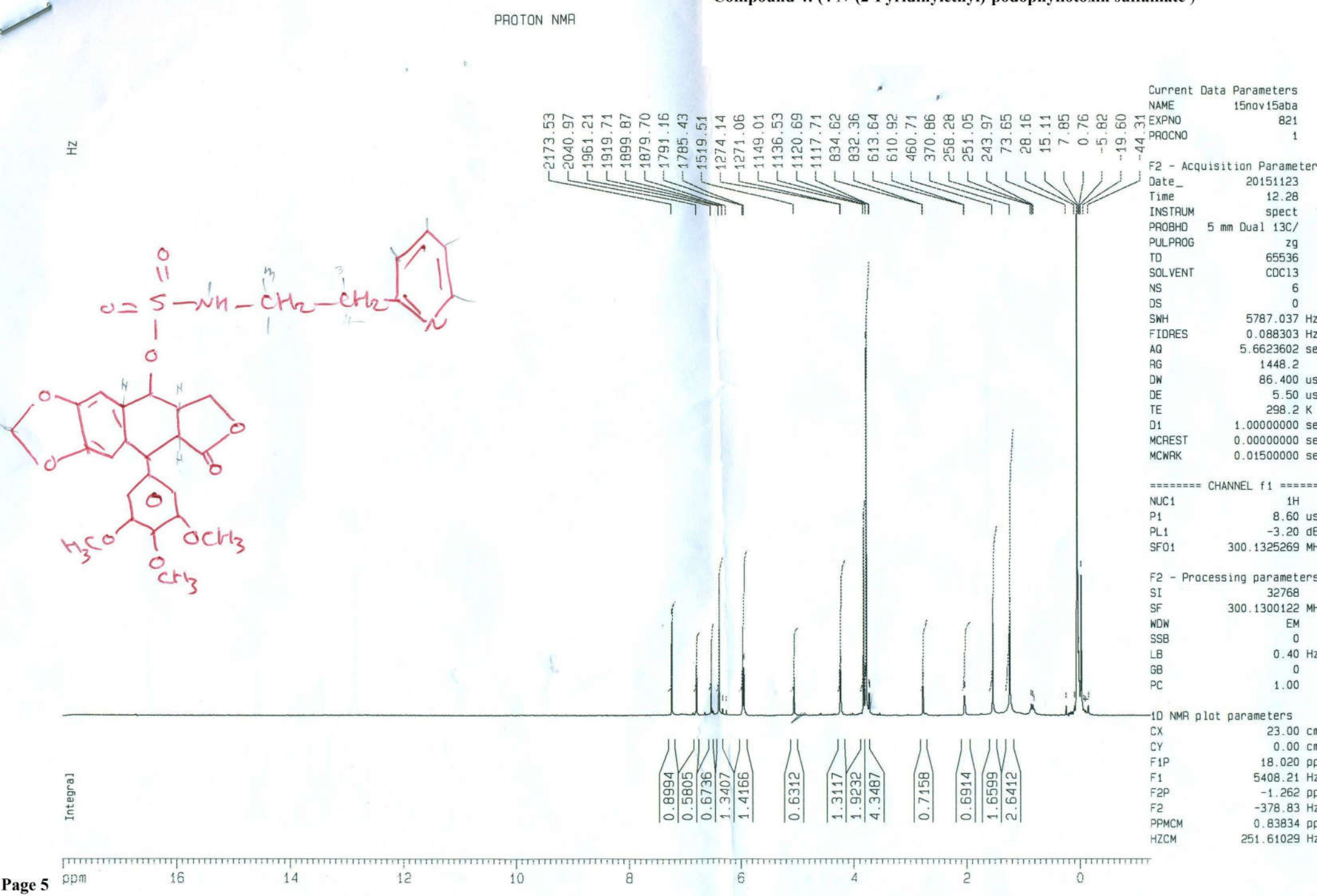
PULPROG zg
TD 65536
SOLVENT CDCl3
NS 1
DS 0
SWH 5787.037 Hz
FIDRES 0.088303 Hz
AQ 5.6623602 se
RG 2298.8
DW 86.400 us
DE 5.50 us
TE 298.2 K
D1 1.00000000 se
MCREST 0.00000000 se
MCWRK 0.01500000 se

======== CHANNEL f1 ======
NUC1 1H
P1 8.60 us
PL1 -3.20 dB
SFO1 300.1325269 MH

F2 - Processing parameters
SI 32768
SF 300.1300122 MH
WDW EM
SSB 0
LB 0.40 Hz
GB 0
PC 1.00

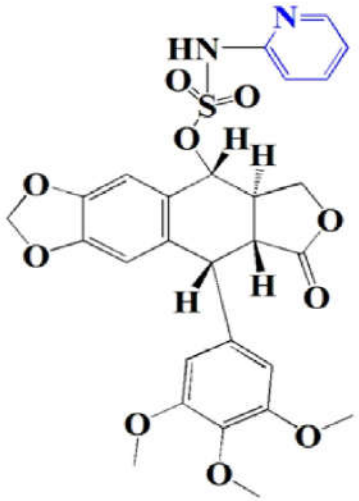
1D NMR plot parameters
CX 23.00 cm
CY 0.00 cm
F1P 18.020 pp
F1 5408.21 Hz
F2P -1.262 pp
F2 -378.83 Hz
PPMCM 0.83834 pp
HZCM 251.61029 Hz

Compound 4: (4-*N*-(2-Pyridinylethyl)-podophyllotoxin sulfamate)



Compound 5: (4-*N*-(2-Pyridinyl)-podophyllotoxin sulfamate)

L4-S2
HNMR



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Faculty of Science
Department of Chemistry

Instrument Model:
Bruker 500 MHz–Avance III

Operator: Rola Hassouneh
nmr500@ju.edu.jo

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Current Data Parameters
NAME          15dec15jalal
EXPNO                  541
PROCNO                   1

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PULPROG                 zg
TD                   65536
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FIDRES           0.154650 Hz
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DW                 49.333 usec
DE                   6.50 usec
TE                  300.4 K
D1              2.00000000 sec
TD0                      1

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NUC1                    1H
P1                   10.60 usec
PLW1          17.39999962 W

F2 - Processing parameters
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WDW                     EM
SSB       0
LB                    1.00 Hz
GB        0
PC                    1.50
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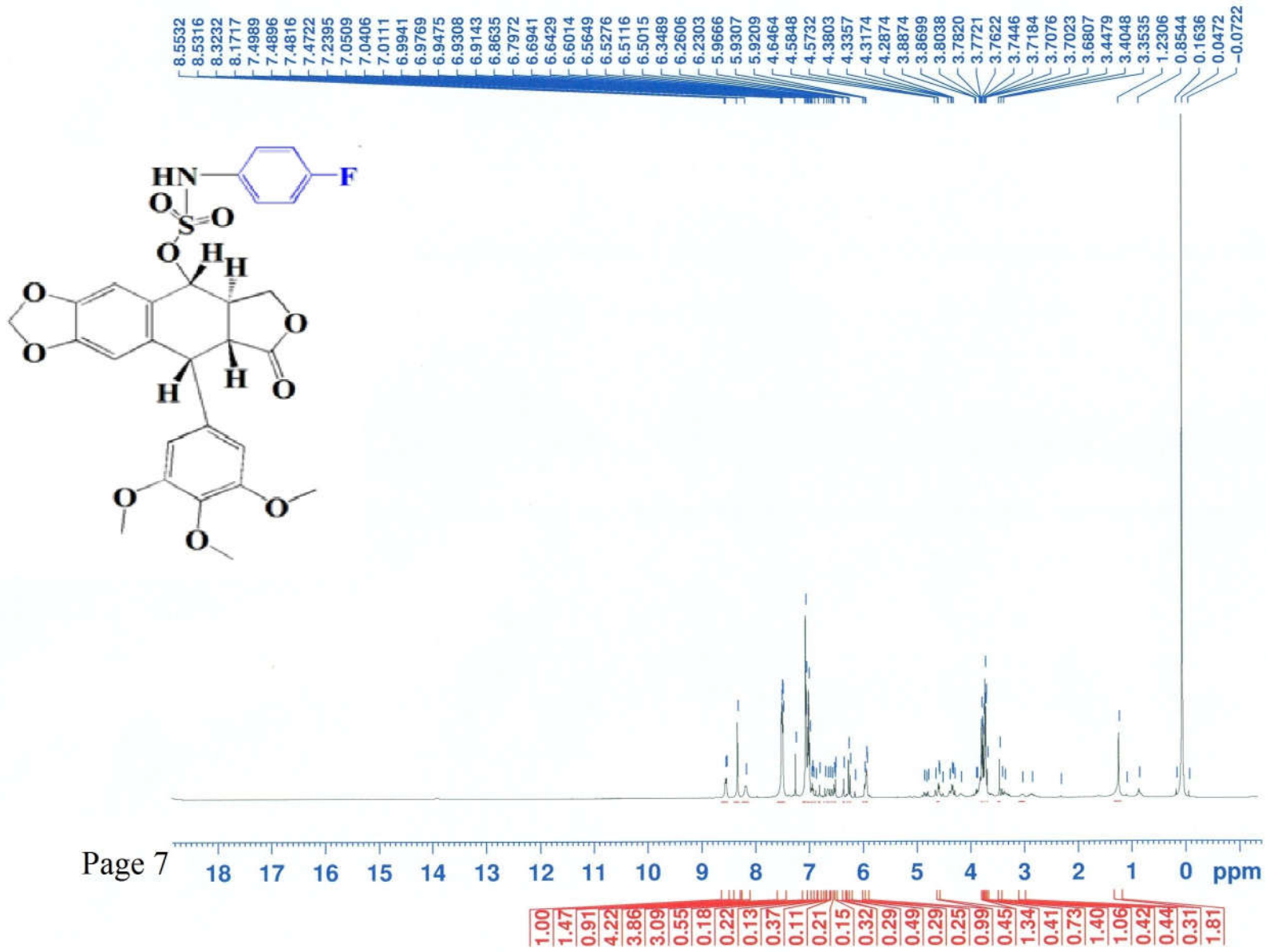
Compound 6: (4-*N*-(4-flourophenyl)-podophyllotoxin sulfamate)

L5-S2
HNMR



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Instrument Model:
Bruker 500 MHz–Avance III

Operator: Rola Hassouneh
nmr500@ju.edu.jo


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Current Data Parameters
NAME          15dec15jalal
EXPNO                  511
PROCNO                   1

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Time                 9.46
INSTRUM             spect
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PULPROG                zg
TD                  65536
SOLVENT             CDCl3
NS                     32
DS                      0
SWH           10135.135 Hz
FIDRES         0.154650 Hz
AQ             3.2331092 sec
RG                 35.17
DW                49.333 usec
DE                 6.50 usec
TE                300.4 K
D1           2.00000000 sec
TD0                     1

======== CHANNEL f1 ========
SFO1         500.1344108 MHz
NUC1                   1H
P1                 10.60 usec
PLW1         17.39999962 W

F2 - Processing parameters
SI                 131072
SF           500.1300235 MHz
WDW                    EM
SSB       0
LB                  1.00 Hz
GB        0
PC                  1.50
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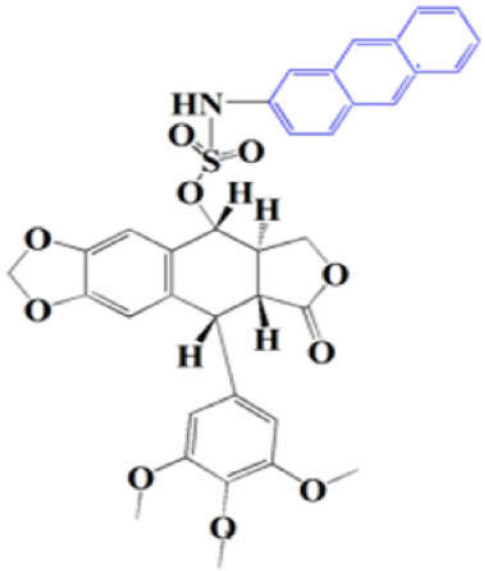
Compound 7: (4-*N*-(2-Anthracenyl)-podophyllotoxinsulfamate)

L6
HNMR



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Instrument Model:
Bruker 500 MHz–Avance III

Operator: Rola Hassouneh
nmr500@ju.edu.jo


```
Current Data Parameters
NAME          16jan15jalal
EXPNO                  131
PROCNO                   1

F2 - Acquisition Parameters
Date_             20160118
Time                 12.46
INSTRUM              spect
PROBHD    5 mm PABBO BB/
PULPROG                zg
TD                  65536
SOLVENT             CDCl3
NS                     16
DS                      0
SWH             10135.135 Hz
FIDRES          0.154650 Hz
AQ              3.2331092 sec
RG                  71.89
DW                49.333 usec
DE                 6.50 usec
TE                300.4 K
D1             2.00000000 sec
TD0                     1

======== CHANNEL f1 ========
SFO1          500.1344108 MHz
NUC1                    1H
P1                  10.60 usec
PLW1         17.39999962 W

F2 - Processing parameters
SI                    131072
SF            500.1300235 MHz
WDW                     EM
SSB       0
LB                  1.00 Hz
GB        0
PC                  2.00
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